

Notice of Allowability

Application No.

10/823,385

Examiner

Sang Nguyen

Applicant(s)

EARTHMAN ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/19/06 & 01/4/07.
2. ☒ The allowed claim(s) is/are 1-3, 7-10, 12-14, 16, 22-27, 31, 33-35, 37, 43-52 which have been renumbered as indicate 1-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>1/4/07</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Clifford G. Cousins (Reg. No. 50,315) on January 04, 2007.

The application has been amended as follows by amendment on 12/19/2006:

- a. **Claims 15, 17, 32, 36, and 38 have been canceled.**
- b. **Claim 16 in line 1, respectively; delete "15" and replaced by – 1 --**
- c. **Claims 33, 34, 35, and 37 in line 1, respectively; delete "32" and replaced by**

–26--

- d. Please, **amend claims 1 and 26** as the following:

1. (Twice Amended) A system for quantifying an evolution an characteristic of a surface of an object, the system comprising:

an energy source for transmitting a source signal over time to a surface of an object for specular reflection or scattering;

a detector section for receiving a received signal from the surface and for providing a detector signal indicative of the received signal, the detector section receives a plurality of received signals and provides a corresponding plurality of detector signals;

a processor for receiving the detector signal from the detector section, the processor for applying an algorithm to the detector signal to quantify at least one of a temporal and a spatial change in a characteristic of the surface, the processor applying the algorithm to the plurality of detector signals, the processor includes a peak detector for comparing each of the detector signals to a threshold and providing a thresholded detector signal when a respective one of the detector signals meets the threshold, the processor providing a characteristic signal when a condition of the peak detector is met, the processor applying a summation function to the threshold detector signals and providing the characteristic signal when the result of the summation function meets the threshold; and

a computer for receiving the characteristic signal from the processor and for processing the characteristic signal, the computer processing the characteristic signal to at least one of determine a failure precursor, perform a damage prognosis, and perform a remaining-life prognosis.

26. (Twice Amended) A method for quantifying an evolution of a characteristic of a surface of an object, the method comprising:

transmitting a source signal over time to a surface of an object for specular reflection or scattering;

detecting a received signal from the surface, the detecting step including receiving a plurality of received signals and providing a corresponding plurality of detector signals; and

processing a detector signal indicative of the received signal by applying an algorithm to the detector signal to quantify at least one of a temporal and a spatial change in a characteristic of the surface, the processing step includes processing the plurality of detector signals by applying the algorithm, the processing step includes providing a characteristic signal when at least one detector signal meets a condition, the processing step includes processing the characteristic signal to at least one of determine a failure precursor, determine a damage prognosis, and determine a remaining-life prognosis, wherein the processing includes comparing each of the detector signals to a threshold and providing a thresholded detector signal when a respective one of the detector signal meets the threshold and applying a summation function to the threshold detector signals; and

providing a characteristic signal when at least one of the detector signals meets a condition and providing the characteristic signal when the result of the summation function meets the threshold.

The following is an examiner's statement of reasons for allowance:

Claims 1-3, 7-10, 12-14, 16, 22-27, 31, 33-35, 37, 43-52 are allowed over the prior arts of the record.

As independent claim 1 is allowed over the prior art of record, taken alone or in combination, fails discloses or render a system for quantifying an evolution of a characteristic of a surface of an object comprising all the specific elements with the specific combination including of the processor includes a peak detector for comparing

each of the detector signals to a threshold and providing a thresholded detector signal
when a respective one of the detector signals meets the threshold, the processor
providing a characteristic signal when a condition of the peak detector is met, the
processor applying a summation function to the threshold detector signals and providing
the characteristic signal when the result of the summation function meets the threshold;
and a computer for receiving the characteristic signal from the processor and for
processing the characteristic signal, the computer processing the characteristic signal to
at least one of determine a failure precursor, perform a damage prognosis, and perform
a remaining-life prognosis in combination with the rest of the limitation of claim 1. Also,
the dependence claims 2-3, 7-10, 12-14, 16, 22-25, and 44-52 are allowed by virtue of
their dependence on independence claim 1.

As independent claim 26 is allowed over the prior art of record, taken alone or in
combination, fails discloses or render a method for quantifying an evolution of a
characteristic of a surface of an object comprising all the specific elements with the
specific combination including of the step of the processing step includes providing a
characteristic signal when at least one detector signal meets a condition, the processing
step includes processing the characteristic signal to at least one of determine a failure
precursor, determine a damage prognosis, and determine a remaining-life prognosis,
wherein the processing includes comparing each of the detector signals to a threshold
and providing a thresholded detector signal when a respective one of the detector signal
meets the threshold and applying a summation function to the threshold detector
signals; and providing a characteristic signal when at least one of the detector signals

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meets a condition and providing the characteristic signal when the result of the summation function meets the threshold in combination with the rest of the limitation of claim 26. Also, the dependence claims 27, 31, 33-35, and 37 are allowed by virtue of their dependence on independence claim 26.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

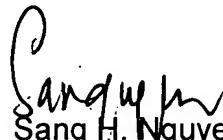
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 4, 2007


Sang H. Nguyen
Patent Examiner
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